

## CLAIMS

What is claimed is:

1. A method, comprising:  
performing an inverse DCT upon data using processor executable instructions to generate a first result in a first color space; and  
performing a conversion upon the first result using conversion hardware to generate a second result in a second color space.
2. The method as recited in claim 1, wherein:  
performing the conversion includes performing a matrix multiplication for a color space conversion from the first color space to the second color space.
3. The method as recited in claim 2, wherein:  
performing the inverse DCT includes using a Winograd process.
4. The method as recited in claim 3, wherein:  
with the first result having a first format, performing the conversion includes converting the first result from the first format to a second format using the conversion hardware.
5. The method as recited in claim 4, wherein:  
the first format includes a first plurality of data elements having an integer portion and a fractional portion; and  
the second format includes a second plurality of data elements having an integer portion.
6. The method as recited in claim 5, wherein:  
the first plurality of data elements each include 16 bits; and  
the second plurality of data elements each include 8 bits.
7. The method as recited in claim 6, wherein:  
the fractional portion of the first plurality of data elements includes 5 bits; and  
the integer portion of the first plurality of data elements includes 8 bits.

8. The method as recited in claim 7, wherein:  
the first color space includes a YCaCb color space; and  
the second color space includes a RGB color space.

9. A conversion apparatus, comprising:  
a formatting device arranged to receive decompressed data  
generated from the execution of processor executable instructions and  
configured to generate reformatted data from the decompressed data; and  
a color space converter configured to perform a color space  
conversion on the reformatted data.

10. The conversion apparatus as recited in claim 9, wherein:  
the color space converter includes a configuration to perform  
the color space conversion using a matrix multiplication.

11. The conversion apparatus as recited in claim 10, wherein:  
the decompressed data includes a first plurality of data  
elements having an integer portion and a fractional portion; and  
the reformatted data includes a second plurality of data  
elements; and  
the formatting device includes a configuration to generate the  
second plurality of data elements having an integer portion.

12. The conversion apparatus as recited in claim 11, wherein:  
the computer executable instructions include a configuration to  
generate the decompressed data by performing an inverse DCT using a  
Winograd process.

13. The conversion apparatus as recited in claim 12, wherein:  
each of the first plurality of data elements includes 16 bits; and  
each of the second plurality of data elements includes 8 bits.

14. The conversion apparatus as recited in claim 13, wherein:  
the reformatted data includes YCaCb color space data.

15. The conversion apparatus as recited in claim 14, wherein:  
the color space converter includes a configuration to convert

the reformatted data to RGB color space data.

16. A data pipeline, comprising:  
     a processing device configured to execute instructions to compute an inverse DCT using a Winograd process to generate decompressed YCaCb color space data in a first format;  
     a converter configured to change the YCaCb color space data from the first format to a second format; and  
     a color space converter configured to generate RGB color space data from the YCaCb color space data in the second format.

17. The data pipeline as recited in claim 16, wherein:  
     the YCaCb color space data in the first format includes a first set of data elements each having 16 bits; and  
     the YCaCb color space data in the second format includes a second set of data elements each having 8 bits.

18. The data pipeline as recited in claim 17, wherein:  
     the first set of data elements each include an integer portion and a fractional portion; and  
     the second set of data elements each include an integer portion.

19. The data pipeline as recited in claim 18, wherein:  
     the color space converter includes a configuration to generate RGB color space data from the YCaCb color space data in the second format using a matrix multiplication.

20. An apparatus, comprising:  
     means for executing code to perform an inverse DCT to generate data in a first format;  
     means for converting the data in the first format to the data in a second format; and  
     means for performing a color space conversion on the data.

21. The apparatus as recited in claim 20, wherein:  
     the data in the first format includes a first plurality of data

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elements having an integer portion and a fractional portion; and  
the data in the second format includes a second plurality of  
data elements having an integer portion.

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